

4D

Notice of Allowability

Application No.

10/662,979

Examiner

Robert Hodge

Applicant(s)

EXTRAND, CHARLES W.

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/3/05.
2. ☒ The allowed claim(s) is/are 1-3 and 5-32.
3. ☒ The drawings filed on 15 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>1/3/05</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 1/3/05, with respect to the objection to the specification and the rejection of claims 1-3 and 5-32 have been fully considered and are persuasive. The objection to the specification and the rejection of claims 1-3 and 5-32 has been withdrawn.
2. The amendments to the claims is also acknowledged and the examiner now gives patentable weight to the fuel cell stack apparatus of the claims since it is now positively recited in the claims. And furthermore the examiner acknowledges that claim 4 is now canceled without prejudice or disclaimer.
3. With the above amendments and further examination the examiner finds the application to be in condition for allowance. The examiner's reasons for allowance will be discussed in the proceeding office action.

Information Disclosure Statement

4. The information disclosure statement filed 1/3/05 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The U.S. patent and pre-grant publications have been considered as well as the one Canadian patent application publication, but none of the other foreign documents nor the non-patent literature publications have been considered since as of this office action the references have not

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been provided to the examiner. And there is no concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not fully been considered.

Allowable Subject Matter

5. Claims 1-3 and 5-32 are allowed.
6. The following is an examiner's statement of reasons for allowance:
7. The prior art made of record does not teach a fuel cell stack apparatus having plates with a surface structure adapted for repelling liquids, wherein the distribution of the asperities on the surface of the plate are determined by a contact line density " Λ_L " which is determined by the specific formula found in independent claims 1, 5, 12 and 22. Nor does the prior art teach a method for producing the distribution of the asperities according to the formula in the above listed claims. The prior art does allow for altering surface structures of the different components of a fuel cell apparatus to adapt them to repel liquids, but not in the same accordance with the present invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 6,399,234 to Bonk et al., teaches a fuel cell stack utilizing a fine pore plate used to move product water away from the cathode side of the membrane
- b. U.S. Patent No. 6,845,788 to Extrand, teaches a fluid handling component with ultraphobic surfaces
- c. U.S. Patent No. 6,852,390 to Extrand, teaches an ultraphobic surface used for high pressure liquids
- d. U.S. Pre-Grant Publication No. 2004/0209047 to Extrand et al., teaches a microfluidic device with ultraphobic surfaces
- e. U.S. Pre-Grant Publication No. 2004/0206663 to Extrand, teaches a carrier with ultraphobic surfaces
- f. U.S. Pre-Grant Publication No. 2004/0206662 to Extrand, teaches a tray carrier with ultraphobic surfaces

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RWH 2-17-05

A handwritten signature in black ink, appearing to read "Michael Barr", with a stylized flourish at the end.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER